



OTVARC Oscillator

The Oregon Tualatin Valley Amateur Radio Club Newsletter

April 1995 Issue

...From the Prez

from Bill - N7VZF

It's spring. The lambs are in the field, the trees are in flower and so are my allergies. Springtime is when we traditionally do our first house cleaning of the year. As it was so delicately put to me several years ago... "All Hams are Pack Rats!" If you have things laying around not doing anything (equipment that is, not your teenage son), you might consider donating it to a worthy cause. The Red Cross is still looking for equipment to outfit their "COW" (Chapter on Wheels). See VP-Janet's articles in this issue as well as the article on the "RadioActive Schools". It might give you some ideas on what to do to clean out your shack and make room for all the great stuff you might find at Sea-Pac this year.

Speaking of Sea-Pac, I face the fact that I might not make it to Seaside this year for our annual event. I am working on Saturday's and my shift is changing to the 17:00-24:00 shift the first of April. Oh well, it's a job....

I want to thank Rick - KB7OGD for taking over the Packet SIG. If you have any questions, I am sure that he has the answers or knows where to look.

Speaking of packet. I have an article from the OPEN (Oregon Packet Experimenter's Net) that outlines the recent history of the group on the westside of the river. I will be publishing it in a 2-part series when room is available.

This issue contains the second part of the article about learning CW. This issue is also filled with articles about a myriad of topics including the theory of dark, submitted by Jim - AE7W, and the Satellite Station by Dick - W7KJZ. I am very happy with the response that I have received about articles for the club publication. It makes my job easier when I don't have to bore you with my muddled meandering.

Not much more to say this month. Don't forget about our public service events. If you are interested in getting involved - give Randy - K7ZT a call and let him know... TTFN and TTYL - Bill

Welcome New Members

These people are recent new members to OTVARC:

John Driscoll KC7EOI

John Beaston N6TY

Fred Delgado KC7DDS

Bob Peschka K7QXG

Gerry Villhauer WA0UCQ

Please take time to greet these people and introduce yourself, both at the meetings and on the air.

...From the Second Seat

from Janet Bell, WB7FJC, v.p.

FUTURE TENSE:

Our April program has changed again. For sure---Virginia (KA7HCK) and Jerry (KA7HCL) Thompson will bring us a program about "Life Flight". They have been involved with the program for many years. There will be a free membership in Life Flight given away as a door prize the night of the meeting! Hope you can join us that night!

Both Virginia and Jerry are Lt. Colonels in the Civil Air Patrol. But that is another program.

Upcoming programs: Westside Light Rail, Gary Gilham, with the American Red Cross and the "COW"; Russ Fillinger from the DX Bureau; MARS Stations; Antenna Talk-G5RV; Field Day; Personal and Family Emergency Preparedness with Deputy Peter Poulos, Jr. and some Boy and Girl Scouts who are working on their EP badges; Civil Air Patrol; amateur TV.

As always we are very appreciative of ideas for programs, call me at 648-8821 days, or 648-4147 in the evening with your ideas.

Many Thanks to David Aucsmith, N7VKC, for the program on "Secure Communications". People stayed glued to their seats 'till after 9:30 p.m.! If you missed the program here, TERAC will have David on May 5th.

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Minutes of Board Meeting 3/1/95

1. Meeting called to order at 7:04 pm by President Bill Merwin
2. Those in attendance were Bill Merwin, Janet Bell, Lorna Campbell, Bob Cowan, Wes Allen, Brad Beach, Burt Rooke, Alan Chinnock, Neil McKie, Al Berg, and Chuck Mickley.
3. Moved and seconded to approve the minutes of the February Board Meeting. Approved.
4. Treasurers Report - Everything is OK.
5. Repeater - Wes Allen is working on a possible new location for the 146.690 repeater.
6. Membership - We have 173 current members. We lost 65 to non-renewal.
7. SEAPAC - 250 registrations are in. Mailings have gone out.
8. **Old Business -**
 - Education** - The ARRL videos for Tech and General are in. They are very good. We received a thank you from ARRL for our donation to the comic book project.
 - Jackets, etc.** - Burt Rooke will be gathering estimates for emblems on jackets.
 - Inventory** - Al Berg has a current inventory. It has been verified by Brad Beach.
 - Club Call Sign** - Paper work is in the mail from FCC.
9. **New Business**
 - Moved and seconded to donate \$250 to American Cancer Society in the name of Debbie Allen.
 - Passed unanimously.
10. Moved and second for adjournment at 8:30 pm. Passed.

Respectfully submitted,
Alan R. Chinnock - Secretary

THE PACKET BULLETIN BOARD

Hello All,

I'm very sorry I missed the cutoff date for the newsletter input last month. I was ill and unfortunately the newsletter (and the meeting for that matter) came and went.

At the February meeting I promised to include some helpful packet operating hints in the newsletters to come. I've found several files written by Larry Kenney (WB9LOZ) that are very helpful for beginning packeteers. Each month, I'll include some of these files in the "Packet Bulletin Board" section of this newsletter.

I also said that I'd make myself available from 6pm to 7pm (The hour just prior to the General Meeting) to facilitate a Packet Users Group. I'll be at the Beaverton Elks Lodge at 6pm on April 12th for anyone who would like to discuss packet.

Here at the ALOHA node things have been reasonably quiet. However, I have been somewhat busy testing and setting up new links to other nodes and BBS's. The current configuration at the node looks like this.

Port 0 - 145.51 1200 baud user port and temp backbone link to RHILLS
Port 1 - 439.00 9600 baud backbone link to CEDAR and HLSB
Port 2 - 441.?? 1200 baud backbone test to WLINN
Port 3 - 434.75 9600 baud backbone link to BREEZE

73 - Rick - KB7OGD@KB7OGD.OR.USA.NOAM

VOLUNTEER OPPORTUNITIES

by Janet Bell, WB7FJC

Park Guides

Tryon Creek State Park is looking for people who are willing to set aside about 2 hours a week to engage children in investigating nature and the environment during guided treks along urban wilderness park trails in Southwest Portland. Programs are given on Wednesdays, Thursdays, and Fridays usually in the morning. Slide presentations are followed by the walks. New volunteers are paired with a mentor.

Minimum age = 18. Call 636-4398.

For more volunteer opportunities, call the Volunteer Center at 222-1355.

ANOTHER ONE

(Here's one I haven't read before - Ed.)

I see you at my meetings, but you never say "Hello";
You're busy all the time you're there with those you already know.
I sit among the members and yet I'm a lonesome guy,
The new ones are as strange as I, but you old members pass me by.
But, darn it, you folks asked us in and talk of fellowship--
You could just step across the room, but you've never made the trip.
Why can't you nod and say "Hello" or stop and shake my hand?
Then go and sit among your friends--Now that I understand.
I'll be at your next meeting, perhaps a nicer time to spend.
Do you think you could introduce yourself? I want to be your friend.

From the secretary

Ham radio and building things, the two have been together for the entire history of radio. Marconi sure did not go down to Hometown Radio Outlet when he first wanted to take a crack at talking on the radio. No, he built his own equipment. (I'll bet he did not order a Heathkit either.) And so it has continued until today.

From a personal perspective the construction of things electronic has taken a turn for the worse. As I get older and my eyesight gets weaker, the parts get smaller. I understand that the surface mount devices actually have values printed on them. (At least you do not have to learn the color code.) Part of my solution to this has been to take up antenna building. At least until you get into the microwave region you can still see the parts without a microscope.

So where is this all leading. I think the members of OTVARC should be doing more building of things and talking to each other about it. Maybe the building is going on, but I sure do not hear much about it. Maybe the building is not going on and should be. After all, without construction how can we tell stories about unnamed persons self-igniting power supplies.

I know I am as much to blame as anyone for the lack of group construction activities. I did not participate in the last project night done in the club. It seems to me that it is a good time to consider another project. These events serve to further a number of aspects of the club. They train us about what goes on inside our equipment, teach us how to build and repair the toys we love so much, and give us a time to gather in a social setting.

Now for the big question. What can we build that will make everyone want to join in. Now for the really big answer. I have no clue. There are antennas (my favorite), power supplies (AA7CV), big amplifiers (Stanley Ham), DSP, battery chargers, attenuators (already been done). We could always consider a ground rod as the beginner project. Obviously I need help here.

The best way for this to get off the ground would be for someone who has a construction idea to call me up and talk about it. From there I can help you find some help and support, and we now have a club project. See how simple this is. So someone, surprise me, call and say that you have a project idea for the club. I can be reached at 624-4948.

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RadioActive Schools

Jim Stafford, W4QO
11395 West Road Roswell, GA 30075

Synopsis - The story you are about to read is true. Even the names have been left the same, because these people have given of their time and energy to bring amateur radio schools all across Georgia. It is a story with a happy ending. A story in which teachers and students have invited volunteers to their school to learn more about math, science, social studies, and geography in a way they have never experienced. Little did they know that they would also learn a new art - **radio** - and have fun, too! Actually, they are about to become a **RadioActive School**.

Barnesville, Georgia - It is a cold morning in November in the north Atlanta metro area and the sun is still an hour from rising when the slow cranking of a large motor home-like vehicle is heard through the night air. After a few agonizing groans, the 1978 Revcon van roars to life. After a few minutes warm-up for the engine (the passenger area is without heat of any kind), the unit is shifted into gear and begins to pull slowly forward. It is 5:30 AM and allowing time to stop for a cup of coffee, it is not too early for the Metro Atlanta Telephone Pioneer ARC (MATPARC) emergency can to leave for its destination some 75 miles away, so it can be set up and ready for the 8:15 AM class in Barnesville, a small rural town in central Georgia. The van will make two stops to pick up other team members - Jim, N4ZXR, Ron, K4SLV, and Tom, AC4CL.

The destination today is the Lamar County Elementary School and Mrs. Tanner (Martha, KD4API) is our host for her class of fourth graders and the entire group of five fifth grade classes who will participate in **Radio Day**, a day filled with world-wide radio contacts, amateur television, lasers, computers, and Morse code. This will be quite a switch for her students who have a beautiful new school, but have spent most of their lives in this farm community with probably less than the normal dose of science and math applications to connect with the "Book Learning." Further, with the visit of the van for Radio Day, coupled with Mrs. Tanner earlier obtaining her ham license through a club radio class, and the assignment of a radio mentor - AC4CL, Lamar County Elementary is about to become a **RadioActive School**.

The **RadioActive Schools** program had its foundations in 1989 when MATPARC members starting working with a teacher at Addison Elementary School in Marietta Georgia. That teacher, Carolyn Caldwell, went on to obtain her amateur radio callsign - N4WBI and in the ensuing 3 years saw over 40 students obtain their amateur radio licenses. This program was focused at the fifth grade level. Some have gone on to obtain higher level licenses, but it was never the goal of the program to "Turn out ham operators", rather it was our goal to provide role models in math, science, and social studies, and to excite students by showing them examples of what can be accomplished with technology.

About this same time, the club was offered an old 30 foot long motor van by A.T. & T. The van had been used as a rolling product demonstration vehicle and later as a mobile test equipment calibration laboratory. It had now sleeping facilities or creature comforts. It was simply two parallel work bench areas on either side of an aisle with a shelf above the bench. With two 6500 watt generators and two A/C units, it would make a perfect emergency communications van, something every club dreams of. However, its condition was "run

down" to say the least. It would take a large amount of "Elbow Grease" and some hard currency to get it in road condition. As it sat, we felt about like the dog who chased the car and then didn't know what to do when he caught it!

A fund raising campaign of members, corporate sponsors, and the Telephone Pioneers of America netted us over \$6000 to apply toward new tires (\$1800), new exhaust system, new steering components, and brakes. At one time, we wanted to paint the van but after a thorough scrubbing and selective waxing, it looks pretty good if you don't get too close! After the trip to the garage and several work parties installing wiring, antenna feedline access, and a special bracket built by N4SE and N4ZFB for a GAP antenna (not to mention several smaller ones for most bands 80 meters through 1292 Mhz), we were ready to outfit the van for any emergency. The club had gained access to or obtained a good supply of radios over the years and these were used to outfit the van. The first year in operation we were called on for numerous demonstrations, parades, and exercises, but we only went to one real emergency - a major hospital had lost its communications due to road work which had cut a large telephone cable. Not that we wanted to see disasters happen, but we began to wonder if all the work had been worth it.

Enter the school radio program. We began to receive inquiries from several schools about whether we could do demonstrations along the line of the work we were doing at Addison. It occurred to us that if we could take the van with its equipment and integrate it into the school program, we could give the van more periodic usage and get radios and computers to schools in a tidy package. So began the **Radio Day** program. We were able to visit some schools where the teachers had never heard much of ham radio, but we were also able to revitalize some schools where a lone amateur radio operator had been holding classes and needed a "Big Bang" effect we could bring with our van.

In the first year of operation (1991-92), we held Radio Days at Redan Elementary in Lithonia, Addison Elementary - our original school, Roswell North Elementary where by now Martha, KD4KEY had attended a class and received her license, Mabry Middle and Daniel Middle Schools in Cobb County. In the next year (1992-93), we went to Hiram Elementary where Jack, N4HOH, had been using radio effectively for a few years, then on to Turner Middle in Lithia Springs, Crabapple Crossing in Alpharetta, and Our Lady of Assumption School in Atlanta where another teacher - Charmine, KC4FRI had obtained her license on her own and was trying to get things rolling. During the current year (1993-94), we were able to hold Radio Days at Chapel Hill Middle School in Douglas County, Salem J. H. School, and Cass Middle school

Continued - RADIOACTIVE - Page 9

News From All Over

Rose Festival Needs Volunteers

ROSE FESTIVAL will be here sooner than you think! We're already looking for volunteers to work the two parades.

The **STARLIGHT PARADE** is the same weekend as the SEAPAC convention (Saturday, June 3, 1995). So, if you're not going to spend the entire weekend there, we could use 2-meter & 440 operators to each cover (Walking back and forth) about a 3 block range along the parade route. We'll need about 15 operators (which is always a challenge when most hams are busy tiptoeing through tables of trash tantalized by those terrific treasures). It's a long time to June, but please be reasonably certain that you'll be able to work the parade if you volunteer.

The **GRAND FLORAL PARADE** (Saturday June 10, 1995) has many operators already, however, each year there is some turn over. If you would like to be placed on a list of potential volunteers, please give me a call.

The **PORTLAND ROSE FESTIVAL ASSOCIATION** is grateful to the many hams who operate each year and to **ARRG** whose repeaters are used for these events. They say **THANK YOU!**

Contact: Barry Carlson (WB7WTD) -
245-8279(eve); 254-1265 (days)

Happy Birthday Wishes to OTVARC Members

As a new feature I would like you to join me in wishing the following people Happy Birthday this month.

04/01	KA7AMZ	Dennis Johnson
04/01	KD7GJ	George Gale
04/02	KG7FS	Rich Jones
04/03	W7HPI	Don Berger
04/04	KI7GY	Kenneth Moore
04/07	N7SRN	Rick Doescher
04/11	W7GWC	Doc McLendon
04/12	KA7NYY	Cyrus Righter
04/12	KA7RNM	Grant Wilson Jr
04/12	KB7PVW	Melvin Sutton
04/13	KB7WQI	Jimmin Chang
04/16	W7YOW	Ron Remsen
04/17	KB7DQZ	Virginia Hess
04/18	K7WWG	Wes Allen
04/19	N7VZD	Mike Fudge
04/21	KB7NTT	Richard Rasch
04/24	KB7SVB	V. Leon Hixon
04/24	N7TYP	Jeri Kubitz
04/25	KA7HMZ	Howard Wahl
04/25	N7BIJ	Warren Knight
04/26	KB7UPK	Connie Harrison
04/26	N7WAL	Sally Butterfield
04/27	KB7OMF	Ann Davis
04/27	KC7HNY	Kathy Stevens
04/29	KB7WJN	Trudi Merwin



BELONGING--THAT'S WHAT IT'S ALL ABOUT

Parents! Do you know where your teenagers are? Maybe they'd like to be Exploring!

Explorer Posts help young men and women decide what they might like to do with their lives.

Washington County Sheriff's Office has six deputies who were former Explorers with their Search and Rescue Explorer Post--even two father/son teams.

Explorer Posts are available for: Fire, Law Enforcement, Search & Rescue, Architects, Accounting, Animal Care, Band/Drum & Bugle, Civil Air Patrol/Aviation, Contractor, Outdoors/Hiking, Camping, Computer Science, Electronic Engineer/Technician, Forestry, Geology, Horseback Riding, Law/Govt/Public Service, Medical/Dental, Military, Radio/TV Production, Religion, Rock Climbing/Rappelling, Scuba Diving, Skateboarding, Snow Skiing, Teacher, Veterinary, Zoology,

For information on the Exploring Program, please call: **225-5762**, Shari, the Exploring Secretary at the Boy Scouts of America.

Remember Exploring is for Girls too!

If young people are involved in Exploring they don't have as much time to get into trouble. My dear old Mother says "The devil finds work for idle hands." She always made sure the devil didn't stand a chance!

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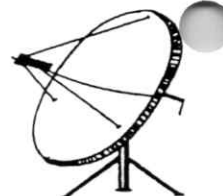


From: Satellite Station - W7KJZ

If you want to work the satellites it goes without saying that you have to know where they are, that is, tracking them. There are graphical methods for doing this. A good reference for this would be the ARRL's "The Satellite Experimenter's Handbook" by Martin Davidoff, K2UBC. This is a good book to have if you want to get a basic understanding of amateur satellites. I have a 1990 version which does not include information on the newer satellites. It's possible that a newer version is available.

That being said, I shall spend the remainder of this article dwelling on tracking software. Amsat sells tracking software for: IBM PCs, Macintosh, Amiga, C129 & 64, TRS-80, Apple II, Tandy CoCo 2 or 3, TRS-80, ATARI 8 bit & ST, and the HP-41CV programmable calculator. I only have experience with IBM PC software. For information send AMSAT-NA a request for information on their tracking programs to AMSAT-NA, 850 Sligo Ave. Silver Spring, MD 20910.

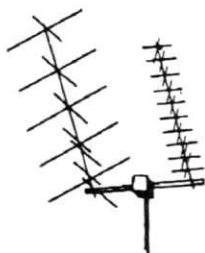
Now for the IBM Clones. I have a shareware satellite tracking program called "Traksat" with a date of May 20, 1992. Red Robert, AA7CP, has used this software. He has the best experience that I know of on the use of this program. I use a DOS program called INSTANT TRACK written by Franklin Antonio. This is available from AMSAT-NA and it costs about \$50 which is mostly used to support their upcoming Phase IIID launch (more about that in a future article). This program has many features. It reports both numerical data and graphical presentations of satellite orbits. I use the graphical the most when I am actually at my station. I print out the numerical outputs for planning my schedule for this or that satellite. My most used graphic is a mercator map which displays a circle which represents the satellite's foot print of visibility to an observer or more to the point, observing antenna on earth. This same display (VGA in my case) contains numerical data at the bottom about latitude, longitude, elevation from your QTH, the distance ("as the crow flies") the satellite is from your QTH, and more. This makes it pretty easy to know where a satellite is when it is near your qth and how long it will be from Acquisition Of Signal (AOS) to Loss Of Signal (LOS). Sounds like NASA now doesn't it? If you get QST check out page 87 of the April 95 issue. That picture looks a lot like one of the graphical displays of Instant Track!



Well, I could go on about the features of this program, but that would make this a novel rather than article. In a future article I need to tell you about transmitting/receiving to/from a satellite. There also is the WISP program which is BOTH a tracking/transmitting/receiving which I mostly use with the digital satellites. The WISP program is an article in itself!

Before I quit this time, I want you to know about the "fuel" all tracking programs require, Keplerian Elements or KEPS for short. These are 8 basic orbital elements (numbers) which describe a satellite's orbit which is always changing!! I typically update my tracking programs once a week and I have had no problems finding satellites. It might be possible to update less frequently, but a month might be pushing things. You might ask where do you get this information? There are telephone BBSs that have them, they are available on Internet for you internet surfers, but I have never had trouble with the KEPS I have downloaded using packet radio. If you are not on packet radio, well...then that's the subject of another article!

73 de Dick, W7KJZ



ANTENNA: A length of wire or aluminum tubing cut a little too short to resonate at amateur frequencies.

Acquiring the Radiotelegraph Code

Wm G Pierpont N0HFF

Reprinted from an article published in the *Morsum*

Magnificat - Christmas 1993 Issue

(Part 2 of a 2 part series supplied by Burt Rooke - K17JX)

Variety of Schemes

In what follows we shall present a number of schemes devised to facilitate achieving stage one proficiency. Most of them require some kind of 'instructor', whether personal or by proxy, and at least one requires a home computer.

The Morse University system is for self-instruction together with a Commodore computer to accept and operate its module. May format alternates in speed and composition are selectable by the student to suit his own needs. Recommendations are for the learning of one new character in each 20 to 30 minute practice session. It is presented repeatedly alone and/or in groups of two to five until it is immediately recognised. Then it is intermixed (in ratios selected by the student) with letters previously learned, and practised until it is firmly fixed in the mind. It is recommended that the characters be sent at a 20 wpm individual rate, with a three second interval at first for identifications. This interval is gradually reduced. Constant speed or increasing speed runs are programmable readily. The average student is said to achieve about 20 wpm after about four weeks of study consisting of two 20-30 minute daily periods, or a total of some 20-30 hours study. This system has much to commend it. (Letters are introduced in a n unrelated, uncontrasted sequence.)

The Koch System

Koch in Germany in the early 1930s developed an effective procedure as follows: At first two letterw with distinctly differing patterns were introduced, each presented to the student individually, then presented to him for recognition and writing down as sent in random order. Signals were sent at 12 wpm with normal spacing (i.e., no lengthened spaces between them), his theory being that 12 wpm would allow the signals to be heard as units, and normal spacing would discourage any attempt to analyse them. When 90 per cent or more correct indtification was rached, a new letter would be added, and so on until the entirety of the 'alphabet' (including numbers, etc.) was completed. At the end of about 14 hours of instruction the average student could receive 12 wpm. That is a phenomenal accomplishment. (New letters seem to have been unrelated.)

The 'whole' method, also termed the 'reinforcement' method was tried by some psychologists. At the first session all 36 'letters' were taught, and then the instructor immediately began a series of 'reinforcement' runs of 100 characters each. Each character was sent and the student was given three seconds to write down his identification, then the instructor identified it. If the student erred (writing a wrong letter or none at all) he was to write just below its correct identification. One second later the next character was sent, and so on to the 100th. (Character were sent at 18-20 wpm.) At this point the

student tabulated the missed letters and had a short rest period before taking a second similar run. Letters were sent at random and the entire 36 were covered.

Four of these 100-character runs were done the first day. (Overall rate was about ten charcter per minute at this stage.) Each day this practice continued, but as proficiency improved, up to five or more letters were sent before hey were identified. On the average it took about nine hours to reach 95 per cent correctness (less than four hours for the best and over 20 for the slowest). After this speeds were increased, and it took about 18 hours to reach 5 wpm, 36 hours to achieve 10 wpm, and 50 hours for 12 wpm on the average (some reached 20 wpm by this point). Nothing was gained - it took about the same instructional time a for other common sound methods.

Sound or Rhythm Pictures

During WWII psychological studies on the order of learning the letters were made, and it appeared that with the ordinary sound teaching approaches, it made little difference in overall learning time. Build-up groups, such as E I S H 5, or E A R L seemed to differe little from radom or other groupings.

A number of attempts to have been made through the years to devise a way to quickly reduce the 'hesitation' time between hearing and recognition. Shying away from the visual approach, suggestions have been presented to provide a sound or thymhm picture, such as one suggestion 'pay day today' as the rhythm for Q. But in no way does this suggest Q itself. One of the earliest published attempts was by the prestigious Wireless Press in 1921. During WWI, three psychologists tested a system of mnemonics using key words whose initial letter, rhythm, inner grouping, accent, length and hierarchy would sound like the code signal and suggest the letter, to reduce confusion in learning. That they only partially succeeded can be seen from their list shown in the accompanying table.

When tested against the usual sound approach most people gained little or nothing. No doubt a number of such schemes have been devised. One currently on the market is 'Code Quick' which appears to include 'Dog Did It' mnemonic from the aforementioned list.

For many years the 'Dodge Radio Shortcut' was advertised widely. This system presented the code visually with a different sort of mnemonic,

Estate Sale

I have some equipment that has been turned over to the club to sell for the estate of K7DNK - Gaylord Smith.

1- Kenwood TH205 2-meter HT with extra battery and charger - Best offer over \$100.00

1- Kenwood TS820S - 10-80 HF Xceiver with MC-50 mic and Digital display.
150W A/C - 100W D/C \$450.00

Contact Bill - N7VZF for more information - (503)644-1974

The Theory of Dark

discussion by

L0OF / L1RPA

Hans & Rolf

For years it has been believe that electric bulbs emitted Light. However recent information has proven otherwise. Electric bulbs don't emit light; they suck dark. Thus we call these bulbs dark suckers. The dark sucker theory proves:

- (1) The existence of dark
- (2) That dark has mass heavier than that of light and
- (3) Dark is faster than light

The basis for the dark sucker theory is that electric bulbs suck dark. Take for example the dark suckers in the room where you are. There is much less dark right next to them than there is elsewhere. The larger the dark sucker the greater its capacity to suck dark. Dark suckers in a parking lot have a much greater capacity than the ones in this room.

As it is with all things, dark suckers don't last forever. Once they are full of dark they can no longer suck. This is proven by the black soot on a full dark sucker.

A candle is a primitive dark sucker. A new candle has a white wick. You will notice that after the first use, the wick turns black representing all of the dark which has been sucked into it. If you hold a pencil next to the wick of an operating candle the tip will turn black because it got in the way of the dark flowing into the candle. Unfortunately, these primitive dark suckers have a very limited range.

There are also portable dark suckers. The bulbs in these can't handle all of the dark by themselves and must be aided by a dark storage unit. When the dark storage unit is full it must be either emptied or replaced before the portable dark sucker can operate again.

Dark has mass. When dark goes into a dark sucker, friction from this mass generates heat. Thus it is not wise to touch an operating dark sucker. Candles create a special problem as the dark must travel into a solid wick instead of through clear glass. This generates a great amount of heat. It can be very dangerous to touch an operating candle.

Dark is also heavier than light. If you swim just below the surface of a lake you see a lot of light. If you slowly swim deeper and deeper, you notice it getting darker and darker. When you reach a depth of approximately fifty feet, you are in total darkness. This is because the heavier dark sinks to the bottom of the lake and the lighter light floats to the top.

The immense power of the dark can be utilized to human advantage. We can collect the dark that has settled to the bottom of lakes and push it through turbines, which generate electricity and helps to push the dark to the ocean where it may be safely stored.

Prior to turbines, it was much more difficult to get the dark from the rivers and lakes to the ocean. The Indians recognized this problem and tried to solve it. When on a river in a canoe traveling in the same direction as the flow of dark, they paddled slowly, so as not to stop the flow of dark but when they traveled against the flow of dark, they paddled quickly so as to help push the dark along its way.

Finally we must prove that dark is faster than light. If you were to stand in an illuminated room in front of a closed, dark closet, then slowly open the closet door, you would see the light slowly enter the closet, but since dark is so fast, you would not be able to see the dark leave the closet.

In conclusion, we would like to say that dark suckers make all of our lives much easier. So the next time you look at an electric bulb, remember that it is indeed a dark sucker.

Editor's Note:

Many of you may be wondering what this could possibly have to do with Ham Radio? We all know that light and radio waves work on the same theory, so if the theory of light is wrong as presented here, so is the theory of radio. But wait, we can see with a couple of simple examples that the Theory of Dark also applies quite well to Ham Radio. A transmitter is certainly analogous to a light bulb. A couple of years ago, Greg, W7AGQ, brought in his shinny new linear amplifier for show and tell at an OTVARC meeting. Many ham's reaction was even more correct than they knew when they remarked "What a BIG Sucker!" Also we all strive for larger and larger antennas. It doesn't take a rocket scientist to figure out that the larger the antenna, the better its ability to suck....

Submitted by Jim Graffy - AE7W

WE RECENTLY HAD A SILENT KEY IN CENTRAL OREGON. A VERY WELL KNOWN GUY BUT
CAN'T REMEMBER HIS CALL. UNDERSTAND THAT THE MAN DIED FROM DRINKING MILK.
THE COW STEPPED ON HIM.....

where Jimmy, N4LYS has had a very successful program, but wanted to officially join the ranks of the **RadioActive Schools**.

We also take part in special events directly related to schools. For example, we have been a featured attraction at TechFest - a program of the Georgia Youth Science and Technology Center of Newnan, GA. Here we are one of several technology exhibits for a whole day. About 600 visitors attend the event each year. We also were the lead exhibit at Technology Day at Alexander High School, with about 900 students visiting the van and a very comprehensive indoor exhibit. We also were the "Ground Station" for the Addison Elementary link up with STS-50 in the summer of 1992. Although this was a low altitude orbital flight and were not in direct contact with the shuttle, we provided the first part of the link over the two meter repeater network and picked up the autopatch to Chicago and then on to Hawaii where the actual radio link with the shuttle occurred. Five TV stations and 3 newspapers carried the details of this event. Few people outside the club realized that when circuit breakers in the school gymnasium tripped minutes before the scheduled pass, the big van provided all the power from its generators to keep the show going!

So what is the **RadioActive Schools** program anyway? It is really a combination of several things, but in the end it is simply an umbrella program where a lot of amateur radio operators take technology to schools. Not all the people who participate are from the MATPARC club. In fact, members of the Kennehoochee RC have been major school supporters along with Atlanta RC, the Big Shanty Repeater Group, the Douglas County RC, the Southeastern DX Club, and the local chapter of the QCWA. In fact, many other clubs have been real assets to schools in the north Georgia area for years. It just seems to be getting more attention these days.

First, **RadioActive Schools** is the MATPARC emergency van coming to a school for **Radio Day**. Just a few words about Radio Day. It is organized around 2 or 3 modules which we present simultaneously to groups of 10 or less. This keeps the groups small and more personal. For a class of about 30 students, we break them into three groups and assign each to a module leader. At about the 15-18 minute point, we "rotate" the groups to the next module. This allows all students to attend all 3 modules in a 50 - 55 minute class period. When your presenters are prepared, they can convey quite a lot of information in their short period. We have outlines for each of the modules and novice presenters observe those who have worked at earlier Radio Days. With 30 students per class period, 125-150 students can participate per day. We have a handout we give to teachers who inquire about Radio Day or see us at various teacher functions.

(Continued in Part II - Next Month)

INTRODUCTION TO PACKET RADIO - PART 1

- by Larry Kenney, WB9LOZ

Packet Radio is the latest major development to hit the world of Amateur Radio. If you haven't already been caught by the "packet bug", you're probably wondering what it's all about and why so many people are so excited about it. Well, continue reading, because you're about to find out.

Packet seems to offer something different from other facets of Amateur Radio, yet it can be used for everything from a local QSO to a DX contact 2500 miles away (on 2 meters!), for electronic mail, message transmission, emergency communications, or just plain tinkering in the world of digital communications. It presents a new challenge for those tired of the QRM on the low bands, a new mode for those already on FM, and a better, faster means of message handling for those on RTTY. Packet is for the rag chewer, the traffic handler, the experimenter, and the casual operator.

A ham can get involved very easily with relatively small out-of-pocket expenses. All you need is a 2-meter transceiver, a computer or terminal, and a TNC. You probably already have the two meter rig and a computer of some kind, so all you need to buy is the TNC, which costs just over \$100. The TNC is the Terminal Node Controller, the little black box that's wired between the computer and the radio. It acts very much like a modem when connecting a computer to the phone lines. It converts the data from the computer into AFSK tones for transmission and changes the tones received by the radio into data for the computer. It's a simple matter of wiring up a plug and a couple jacks to become fully operational.

Packet is communications between people either direct or indirect. You can work keyboard to keyboard or use electronic mailboxes or bulletin board systems to leave messages. Due to the error checking by the TNC, all of it is error free, too. (That is, as error free as the person at the keyboard types it.) As the data is received it's continuously checked for errors, and it isn't accepted unless it's correct. You don't miss the information if it has errors, however, because the information is resent again. I'll go into how this is accomplished in a later part of this series.

The data that is to be transmitted is collected in the TNC and sent as bursts, or packets, of information; hence the name. Each packet has the callsign or address of who it's going to, who it's coming from and the route between the two stations included, along with the data and error checking. Since up to 256 characters can be included in each packet, more than three lines of text can be sent in a matter of a couple seconds. There is plenty of time between packets for several stations to be using the same frequency at the same time.

If all of this sounds confusing, don't let it bother you, because that little black box, the TNC, does everything for you automatically. Packet might seem very confusing at first, but in a day or two you're in there with the best of them. In this series I'll be telling you more about packet--how you get on the air, how to use it to your best advantage, and ways to improve your operation. We'll talk about that little black box, the TNC, and tell you about all its inner-most secrets. We'll discuss mailboxes, bulletin board systems, and the packet networks that allow you to work stations hundreds of miles away using just a low powered rig on 2 meters, 220 or 450. The world of packet radio awaits you!

ANTENNA TUNER: A piece of equipment designed to fool a transmitter into thinking the antenna was cut to a length which resonates at amateur frequencies. It also fools the operator into thinking that the antenna is working.



SEAPAC '95 SEMINAR SPREADSHEET

		RIVERVIEW			SEASIDE		
		A	B	C	A	B	C
FRI	12 Noon to 6:00 PM	-	-	-	<1> EMI/RFI Workshop Ed Hare KA1CV		
	9:30 AM	<2> DXing Without the Spots Chip Margelli K7JA		<3> Grounding Al Chandler K6RFK	<4> AR&Emerg Comm.in OR T.Burroughs KB7HEK	<5> Packet Radio for Beginners Mike Dunlap K7MYU	
SAT	11 AM	<6> Let's Talk Antennas -A Q&A Session w/ W7EL Roy Lewallen W7EL		<7> EMI/RFI Ed Hare KA1CV	<8> '95 CA Floods Ed Farmer AA6ZM	<9> Intermediate Packet Evan Burroughs N7IFJ	
		L U N C H					
SUN	1 PM	<10> Youth Forum R. White WA1STO S. Helms	<11> Mntnrng w/ PacketRad D. Aucsmith N7VKC	<12> NVIS Ed Farmer AA6ZM	<13> Tech. Iss.inEmerg Response DHuntWB6BYU	<14> Advanced Packet Jim Wagner KA7EHK	
	2:30 PM	<15> Electr. Constr:Meth Tools,Matls E.Hoyt WX7E	<16> El-Mag Flds & Hlth W.Overbeck N6NB	<17> ARRL Forum M.L. Brown NM7N	<18> AR&Hlth Care/Emerg. N.Worcester KB7NFO	<19> HF Radio Data Comm: CW to Clover Ray Petit W7GHM	
SUN	4 PM	<20> Assem. an HF Sta. D. Hunt WB6BYU	<21> VertAnt for 160/80m K. Kopp KOPP	<22> Life in Space S.Helms -	<23> ARRL Spect.Comm. Kaplan etal KG7FU	<24> FORUM: HF Digital Communication Needs Ray Petit W7GHM	
	9:30 AM	<25> Beyond the 2m Rptr R. White WA1STO	<26> Wire & Cable Press Jones N8UG	<27> Ham Rad She Wrote CynthiaWall KA7ITT	<28> Sound-Shake 95 G.Underwood W7AKA	<29> Packet Radio for Beginners (RPT) Mike Dunlap K7MYU	
SUN	11 AM	<30> Electr. Cnstr:Meth, TlsMat(RPT) E.Hoyt WX7E	<31> Antenna PatternDemo Press Jones N8UG	<32> Electr. Troublshng Ed Hare KA1CV	<33> Emerg. Planng. for 1stRespndrs D. Merten -	<34> Intermediate Packet (RPT) Evan Burroughs N7IFJ	



OREGON TUALATIN VALLEY AMATEUR RADIO CLUB

MEMBERSHIP PROFILE

DATE: _____
NAME: _____ CALL: _____ CLASS: _____
ADDRESS: _____ HOME PHONE: _____
CITY: _____ STATE & ZIP: _____
OCCUPATION: _____ WORK PHONE: _____
SPOUSE: _____ YOUR DOB OR AGE: _____
Spouse's Call (If Any): _____

MEMBER ARRL: ☐ Y ☐ N: LIFE: ☐ Y ☐ N: FAVORITE BAND/MODE: _____

INTEREST: SSB ☐ CW ☐ RTTY ☐ PACKET ☐ ATV ☐ VHF ☐
UHF ☐ MARS ☐ DX ☐ CONTEST ☐ TRAFFIC ☐
EXPERIMENTING ☐ OTHERS _____

LIST ANY OTHER HOBBIES, INTERESTS & HOW MANY YEARS LICENSED AS AN
AMATEUR RADIO OPERATOR: _____

Please indicate what area of interest you wish to give your support in furthering the club's mission in Amateur Radio.

CAMPING ☐ CONTEST ☐ EMERGENCY SERVICE ☐ FIELD DAY ☐
SOCIAL ☐ MEMBERSHIP ☐ NEWSLETTER ☐ PUBLIC SERVICE ☐
TECHNICAL ☐ SEA-PAC ☐ OWN COMPUTER ☐ Y ☐ N; (TYPE) _____

Are you VE Certified? Y ☐ N ☐ If Yes - What Organization ARRL ☐ W5YI ☐

How did you become aware of OTVARC: _____

List any comments, concerns or expectations: _____

Give completed form to Club Secretary at the next meeting or send to the club PO Box.



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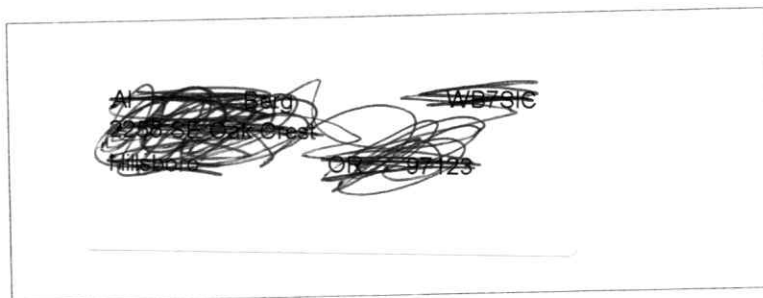
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